

(c) removing the sooty carbon product from the collecting substrate;

(d) contacting the sooty carbon product with a non-polar organic solvent effective to dissolve C_{60} molecules in said sooty carbon product; and

(e) recovering from said solvent a solid carbon product comprising C_{60} molecules.

46. The solid carbon product of Claim 45 further comprising:

(a) purifying the carbon product of step (e) to obtain C_{60} .

47. The solid product of Claim 46 wherein the purification of step (f) is sublimation at 300-400°C, fractional crystallization, column chromatography, capillary electrophoresis, HPLC, preparative-thin layer chromatography, crystallization or extraction.

48. A brownish-red carbon allotrope. - not limited to brownish-red

49. C_{60} .

50. Solid C_{60} .

51. Substantially pure C_{60} .

52. Substantially pure solid C_{60} .

53. C_{60} in macroscopic quantities.

54. C_{70} .

55. Solid C_{70} .

56. Substantially pure C_{70} .

57. Substantially pure solid C_{70} .

58. Crystalline C_{60} .

59. Crystalline C_{70} .

60. Substantially pure crystalline C_{60} .

61. Substantially pure crystalline C_{70} .

62. C_{70} in macroscopic amounts.

63. The C_{60} of Claim 53 wherein the C_{60} is present in amounts that are capable of being detected by IR.

64. The C_{60} of Claim 53 wherein the C_{60} is present in amounts that are capable of being detected by UV absorption.

65. The C_{60} of Claim 53 wherein the C_{60} is present in amounts sufficient to obtain an X-ray diffraction pattern thereof.

66. The C_{70} of Claim 62 in which the C_{70} is present in amounts that are capable of being detected by UV.

67. The C_{70} of Claim 62 in which the C_{70} is present in amounts that are capable of being detected by IR.

68. Macroscopic amounts of substantially pure C_{60} .

69. Macroscopic amounts of substantially pure C_{70} .

70. The solid carbon product of Claim 45, wherein the recovered C_{60} molecules in said solid are in macroscopic amounts.

71. A solid comprising C_{60} , said C_{60} being present in macroscopic amounts.

72. A solid comprising C_{70} , said C_{70} being present in macroscopic amounts.

73. A sooty product comprising C_{60} , the C_{60} in said sooty product being present in sufficient concentration to allow macroscopic amounts of said C_{60} to be separated therefrom.

74. A sooty product comprising C_{70} , the C_{70} in said sooty product being present in sufficient concentrations to allow macroscopic amounts of said C_{70} to be separated therefrom.

75. A sooty carbon product prepared by the process comprising:

(a) vaporizing a carbon source in the presence of an inert gas to provide a vapor of carbon atoms,

(b) quenching said vapor or carbon in said inert gas under conditions effective to nucleate and condense said vapor of carbon atoms into a sooty carbon product comprising C_{60}

molecules, said C_{60} molecules being present in said sooty carbon in sufficient concentrations to allow macroscopic amounts of C_{60} to be separated from said soot.

76. The sooty carbon product of Claim 73, additionally comprising C_{70} .

77. The sooty carbon product of Claim 75 additionally comprising C_{70} .

78. The C_{60} of Claim 68 in which the C_{60} is present in amounts sufficient to obtain an x-ray diffraction pattern thereof.

79. A solid carbon product prepared by the process comprising:

(a) evaporation a carbon source in the presence of an inert quenching gas under condition effective to produce a sooty carbon product in a sufficient concentration to allow a macroscopic amount of said C_{60} to be separated from said sooty product;

(b) collecting the sooty carbon product produced therefrom;

(c) subliming the carbon product comprising C_{60} from the sooty carbon product; and

(d) condensing the sublimed carbon product comprising C_{60} .

80. The solid carbon product of Claim 79 wherein C_{70} is additionally present.

81. The solid carbon product of Claim 79 wherein the C_{60} is present in amounts sufficient to obtain an x-ray diffraction pattern thereof.

82. A solid comprising macroscopic amounts of crystalline C_{60} .

83. A solid comprising macroscopic amounts of crystalline C_{70} .